

REMARKS

The Office Action dated November 10, 2005 has been received and carefully noted. The following remarks are submitted as a full and complete response to the Office Action.

Claim 1 is amended to particularly point out and distinctly claims the subject matter of the invention. Claim 7 is amended to depend from claim 1. Claims 2 and 3 are cancelled without prejudice. Claims 1 and 4-7 are respectfully submitted for consideration.

The Office Action rejected claim 1 under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,530,032 to Shew et al (Shew). This rejection is respectfully traversed. Applicants note that the status of claims 3, 4 and 6 are ambiguous. Thus, in the event that claims 3, 4 and 6 are not allowed, Applicants respectfully request a new non-final Office Action be issued that unambiguously indicates the status of each of the pending claims.

Claim 1, from which claims 4-7 depend, recite a method for forming protected routes, each route comprising two separate paths in a communications network, which network comprises several functional layers on top of one another, each layer forming demands for protected routes in the layers below. The forming includes routing the layers from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation, starting from the layer above the bottom layer, and finishing when the top layer is routed into the layer below the top layer, each routing in turn taking into account the protection demands, and taking into account the routing possibilities in

the layer below. In the method, after each routing of the layer under formation, the routings of the layers below are changed, if needed, in a way that the first below layer is routed first again, and the second below layer second, and the routing is continued until there is no need to route again.

The present invention is directed, in the embodiment, to a method of forming protected routes in which routing of a layer takes into account protection demands and the routing possibilities in the underlying layer, and if required, the underlying layer is rerouted in order to meet the protection demands.

Applicants submit that Shew fails to disclose or suggest all of the features recited in any of the above claims.

Shew is directed to a method of providing fault recovery including the steps of aligning at least a first and second layer of a plurality of communications layers, for a given path in the first layer, defining a corresponding path in the second layer and an alternative path in the second layer, the alternative path in the second layer corresponding to an alternative path in the first layer disjoint from the given path, and on detection in the first layer of a fault in the given path, switching in the second layer from the corresponding path to the alternative path, whereby fault recovery in the network is provided. Shew further describes corresponding paths are provided in a logic layer and a physical layer, and when a fault is detected in the physical layer an alternative path is selected in the logic layer corresponding to an alternative path in the physical layer. Thus, Shew is not related to a method of forming protected routes, but rather is related to

a method of fault recovery in a communications network in which protected routes are already provided. In the arrangement disclosed in Shew, protected routes are already provided in the first and second layers. However, the problem with Shew and other prior art, is that in such communication network arrangements, there may not always be a corresponding alternative pathway in a first layer for an alternative pathway in a second layer in order to meet protection demands.

Applicants respectfully submit that Shew fails to disclose or suggest at least the feature that after each routing of the layer under formation, the routings of the layers below are changed, if needed, in a way that the first below layer is routed first again, and the second below layer second, and the routing is continued until there is no need to route again, as recited in claim 1.

Instead, Shew discloses that when a fault is detected in the physical layer, an alternative path is selected in the logic layer corresponding to an alternative path in the physical layer. Shew does not disclose or suggest the feature of forming new routes in an underlying layer in order to account for protection demands in an overlying layer.

Applicants respectfully submit that because claims 4 and 6 depend from claim 1, these claims are allowable at least for the same reasons as claim 1. Further, Applicants submit that Shew fails to disclose or suggest all of the features of these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited reference fails to disclose or suggest all of the features recited in any of the above claims.

Accordingly, withdrawal of the rejection of claim 1 under 35 U.S.C. 102(e) is respectfully requested.

Claim 2 is cancelled without prejudice and the rejection thereof is moot, however, because cancelled claim 2 was incorporated into claim 1, Applicants will address the rejection of claim 2 under 35 U.S.C. 103(a) as being obvious over Shew in view of US Patent No. 5,559,625 to Smith et al. (Smith).

The Office Action took the position that Shew disclosed all of the features of claim 2 with the exception of rerouting layers. The Office Action asserted that Smith disclosed this feature. Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features of claim 2. Specifically, Smith fails to cure the admitted deficiencies of Shew. Shew is discussed above.

Smith is directed to increasing the amount of re-use of information transmission wavelengths within a network, while not incurring the disadvantage of multi-path effects which can otherwise arise in wavelength re-use. Smith describes that a network advantageously comprises failure protection means for re-directing signals and if necessary, re-assigning the redirected signals to a different band of wavelengths. See Smith at column 5 lines 15-26. However, Smith does not disclose or suggest re-routing underlying layers in order to meet protection demands in an overlying layer, as claimed in the present invention. Thus, Smith fails to cure the admitted deficiencies of Shew.

The Office Action rejected claim 5 under 35 U.S.C. 103(a) as being obvious over Shew in view of US Patent No. 6,704,320 to Narvaez et al. (Narvaez). The Office Action took the position that Shew disclosed all of the features of claim 5, with the exception of providing each transmission line having a weight describing the length of the transmission line and calculating new weights in order to find a new shortest route. The Office Action asserted that Narvaez disclosed this feature. Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claim 5. Specifically, Shew is deficient at least for the same reasons discussed above and Narvaez fails to cure these deficiencies.

Narvaez is directed to an algorithm for determining a shortest path tree between network nodes. The shortest path is determined in response to a link-state or other network topology change. However, Narvaez fails to disclose or suggest at least the feature that after each routing of the layer under formation, the routings of the layers below are changed, if needed, in a way that the first below layer is routed first again, and the second below layer second, and the routing is continued until there is no need to route again. Thus, Narvaez fails to cure the deficiencies of Shew.

Based at least on the above, Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claim 5. Accordingly, withdrawal of the rejection of claim 5 under 35 U.S.C. 103(a) is respectfully requested.

The Office Action rejected claim 7 under 35 U.S.C. 103(a) as being obvious over Shew, in view of Narvaez. The Office Action took the position that Shew disclosed all of the features recited in claim 7 and is analyzed similar to claim 5. Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claim 7. Specifically, Shew is deficient for the reasons stated above and Narvaez fails to cure these deficiencies. Shew and Narvaez are discussed above.

Narvaez fails to disclose or suggest at least the feature that after each routing of the layer under formation, the routings of the layers below are changed, if needed, in a way that the first below layer is routed first again, and the second below layer second, and the routing is continued until there is no need to route again. Thus, Narvaez fails to cure the deficiencies of Shew.

Based at least on the above, Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claim 7. Accordingly, withdrawal of the rejection of claim 7 under 35 U.S.C. 103(a) is respectfully requested.

Applicants respectfully submit that each of claims 1 and 4-7 recite matter that is neither disclosed nor suggested in any of the cited references. Accordingly, Applicants respectfully request that each of claims 1 and 4-7 be allowed and this application passed to issue. In the event that the current pending claims are not in

condition for allowance, Applicants respectfully request a new non-final Office Action that indicates the status of each of the pending claims.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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